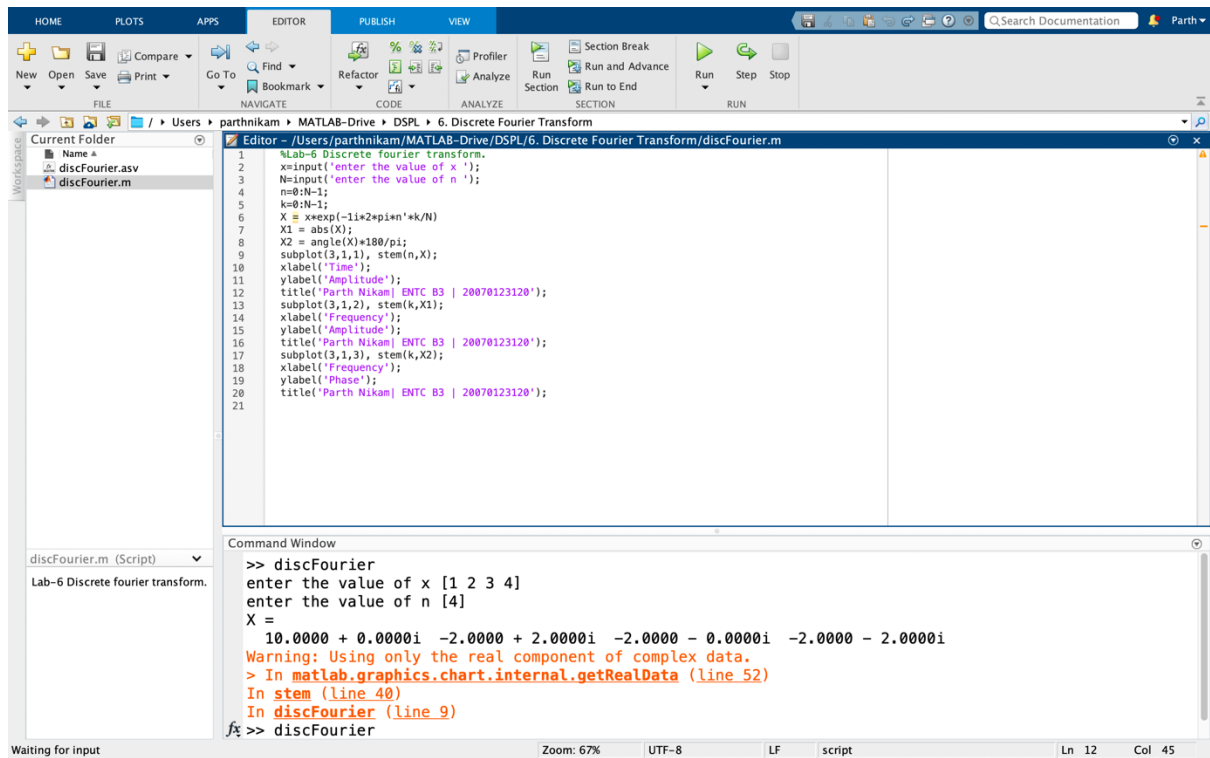


# Digital Signal Processing Lab

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## Experiment 6: Discrete Fourier Transform



The MATLAB Editor window displays the script `discFourier.m` with the following code:

```
1 %Lab-6 Discrete fourier transform.
2 x=input('enter the value of x ');
3 N=input('enter the value of n ');
4 n=0:N-1;
5 k=0:N-1;
6 X = x*exp(-1i*2*pi*n'*k/N);
7 X1 = abs(X);
8 X2 = angle(X)*180/pi;
9 subplot(3,1,1), stem(n,X);
10 xlabel('Time');
11 ylabel('Amplitude');
12 title('Parth Nikam| ENTC B3 | 20070123120');
13 subplot(3,1,2), stem(k,X1);
14 xlabel('Frequency');
15 ylabel('Amplitude');
16 title('Parth Nikam| ENTC B3 | 20070123120');
17 subplot(3,1,3), stem(k,X2);
18 xlabel('Frequency');
19 ylabel('Phase');
20 title('Parth Nikam| ENTC B3 | 20070123120');
21
```

The Command Window shows the execution of the script:

```
>> discFourier
enter the value of x [1 2 3 4]
enter the value of n [4]
X =
 10.0000 + 0.0000i -2.0000 + 2.0000i -2.0000 - 0.0000i -2.0000 - 2.0000i
Warning: Using only the real component of complex data.
> In matlab.graphics.chart.internal.getRealData (line 52)
> In stem (line 40)
> In discFourier (line 9)
fx >> discFourier
```

